

IN THE CLAIMS

Claim 1. (original) A method for binding an exogenous molecule to a binding site, wherein the binding site is located within a region of interest in cellular chromatin, wherein the method comprises:

- (a) identifying an accessible region within the region of interest;
- (b) identifying a target site for the exogenous molecule within the accessible region; and
- (c) introducing the exogenous molecule into the cell;

whereby the exogenous molecule binds to the binding site.

Claim 2. (original) The method according to claim 1 wherein the cellular chromatin is in a chromosome.

Claim 3. (original) The method according to claim 1 or claim 2 wherein the accessible region is a nuclease hypersensitive region.

Claims 4-5. (previously canceled)

Claim 6. (original) The method according to any one of claims 1 to 5, wherein the exogenous molecule is a protein.

Claim 7. (original) The method according to claim 6 wherein the protein performs a process selected from the group consisting of replication, recombination, integration, DNA repair, transcriptional regulation and chromatin remodeling.

Claim 8. (original) The method according to claim 6 wherein the protein is used for detection of a target sequence.

Claim 9. (original) The method according to claim 7, wherein the protein is a transcription factor.

Claim 10. (original) The method according to claim 9, wherein the transcription factor is a zinc finger protein (ZFP).

Claim 11. (original) The method according to claim 6 wherein the protein is encoded by an exogenous nucleic acid introduced into the cell.

Claim 12. (original) The method according to any one of claims 1 to 11, wherein the cell is a eukaryotic cell.

Claim 13. (original) The method according to claim 12, wherein the cell is a plant cell.

Claim 14. (original) The method according to claim 12, wherein the cell is a mammalian cell.

Claim 15. (original) The method according to claim 14, wherein the cell is a human cell.

Claim 16. (original) The method according to any one of claims 1 to 15, wherein the binding site is in a coding region.

Claim 17. (original) The method according to any one of claims 1 to 15, wherein the binding site is in a non-coding region.

Claim 18. (currently amended) The method according to claim 10, wherein the binding site comprises the sequence 5'-NNx aNy bNz c-3' (SEQ ID NO: 38), wherein

each of (x,a), (y,b) and (z,c) is (N,N) or (G,K); and

at least one of (x,a), (y,b) and (z,c) is (G,K); wherein N is any nucleotide and K is either G or T.

Claim 19. (previously canceled)

Claim 20. (original) The method according to claim 11 wherein the nucleic acid is introduced into the cell by a method selected from the group consisting of lipid-mediated gene

transfer, electroporation, direct injection, particle bombardment, calcium phosphate co-precipitation, DEAE-dextran mediated transfer, and viral vector-mediated transfer.

Claim 21. (previously amended) A method for binding a ZFP transcription factor to a binding site, wherein the binding site is located within a region of interest in cellular chromatin, wherein the method comprises:

- (a) identifying an accessible region within the region of interest;
- (b) identifying a zinc finger protein (ZFP) binding sequence within the accessible region;
- (c) designing or selecting a ZFP to bind to the binding sequence; and
- (d) introducing the ZFP into the cell;

whereby the ZFP binds to the binding site.

Claim 22. (original) The method according to claim 21 wherein the ZFP is introduced into the cell by introducing a DNA construct encoding the ZFP into the cell under conditions in which the construct expresses the ZFP.

Claim 23. (original) The method according to claim 21 or claim 22 wherein the cellular chromatin is in a chromosome.

Claim 24. (original) The method according to any one of claims 21 to 23 wherein the accessible region is a nuclease hypersensitive region.

Claims 25-26. (previously canceled)

Claim 27. (currently amended) The method according to any one of claims 21 to 26, wherein the binding site comprises the sequence 5'-NNx aNy bNz c-3' (SEQ ID NO: 38), wherein

each of (x,a), (y,b) and (z,c) is (N,N) or (G,K); and

at least one of (x,a), (y,b) and (z,c) is (G,K); wherein N is any nucleotide and K is either G or T.

Claims 28-56. (previously canceled)

Claim 57. (previously added) A complex between an exogenous molecule and a binding site in cellular chromatin, wherein the binding site is in an accessible region of cellular chromatin.

Claim 58. (previously added) The complex of claim 57, wherein the exogenous molecule is a nucleic acid.

Claim 59. (previously added) The complex of claim 58, wherein the nucleic acid is a triplex-forming nucleic acid.

Claim 60. (previously added) The complex of claim 57, wherein the exogenous molecule binds in the minor groove of double-stranded DNA.

Claim 61. (previously added) The complex of claim 57, wherein the exogenous molecule is a small molecule therapeutic.

Claim 62. (previously added) The complex of claim 57, wherein the exogenous molecule is a protein.

Claim 63. (previously added) The complex of claim 62, wherein the protein is a transcription factor.

Claim 64. (previously added) The complex of claim 63, wherein the transcription factor is a zinc finger protein (ZFP).

Claim 65. (previously added) The complex of claim 57, wherein the accessible region is a nuclease hypersensitive region.

Claim 66. (previously added) A cell comprising the complex of claim 57.

Claim 67. (previously added) The cell of claim 66, wherein the exogenous molecule is a protein.

Claim 68. (previously added) The cell of claim 67, wherein the protein is encoded by a nucleic acid introduced into the cell.

Claim 69. (previously added) The cell of claim 66, wherein the cell is a plant cell.

Claim 70. (previously added) The cell of claim 66, wherein the cell is an animal cell.

Claim 71. (previously added) The cell of claim 66, wherein the cell is a human cell.

Claim 72. (previously added) A method for modulating the transcription of a gene in a cell, wherein the gene is present in a chromosome of the cell, by binding an exogenous molecule to a binding site in the chromosome, wherein the binding site is in an accessible region of cellular chromatin.

Claim 73. (previously added) The method of claim 72, wherein modulation comprises activation of transcription.

Claim 74. (previously added) The method of claim 72, wherein modulation comprises repression of transcription.

Claim 75. (previously added) The method of claim 72, wherein the exogenous molecule is a nucleic acid.

Claim 76. (previously added) The method of claim 75, wherein the nucleic acid is a triplex-forming nucleic acid.

Claim 77. (previously added) The method of claim 72, wherein the exogenous molecule binds in the minor groove of double-stranded DNA.

Claim 78. (previously added) The method of claim 72, wherein the exogenous molecule is a small molecule therapeutic.

Claim 79. (previously added) The method of claim 72, wherein the exogenous molecule is a protein.

Claim 80. (previously added) The method of claim 79, wherein the protein is a transcription factor.

Claim 81. (previously added) The method of claim 80, wherein the transcription factor is a zinc finger protein (ZFP).

Claim 82. (previously added) The method of claim 72, wherein the accessible region is a nuclease hypersensitive region.

Claim 83. (previously added) The method of claim 79, wherein the protein is encoded by a nucleic acid introduced into the cell.

Claim 84. (previously added) The method of claim 72, wherein the cell is a plant cell.

Claim 85. (previously added) The method of claim 72, wherein the cell is an animal cell.

Claim 86. (previously added) The method of claim 72, wherein the cell is a human cell.